



SoftPot



Features

- Linear Position Sensor
- Half the width of the SoftPot
- IP64 Dust Proof, Splash Proof
- Polyester Substrate
- 3M Pressure Sensitive Adhesive (PSA)
- Upon Request
 - Male or Female Nicomatic or Berg Connectors
- Wiper of 0.7-2.2 Newton Force to Actuate Part

Mechanical Specifications

- Life Cycle: >1 million
- Height: $\leq 0.51\text{mm}$ (0.020")
- Actuation Force (with a 6mm wide active cavity):
 - 40°C 0.9 to 2.2 N
 - 25°C 0.9 to 2.2 N
 - +23°C 0.7 to 1.8 N
 - +50°C 0.7 to 1.8 N

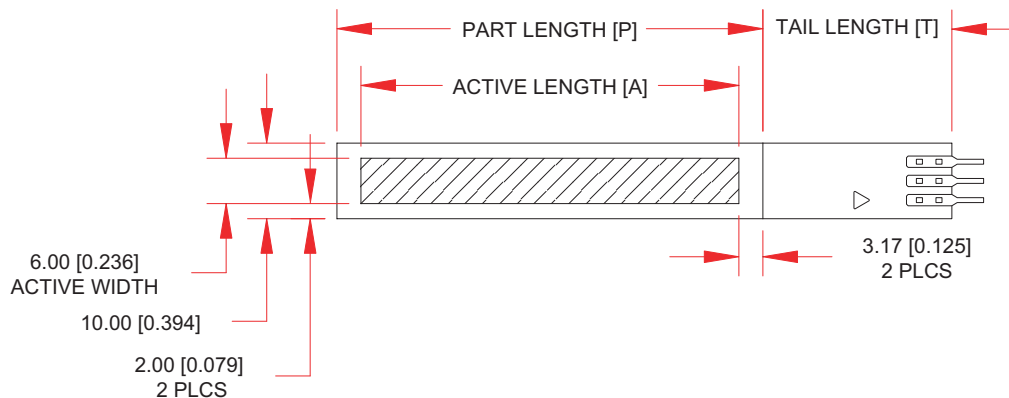
Environmental Specifications

- Operating Temperature: -40°C to +50°C
- Humidity: No affect @ 95% RH, 4hrs 50°C
- IP Rating of Active Area: IP64

Electrical Specifications

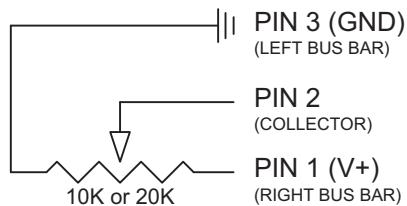
- Resistance - Standard: 10k Ohms (lengths >300mm = 20k Ohms)
- Resistance - Custom: 1k to 100k Ohms
- Resistance Tolerance: $\pm 20\%$
- Effective Electrical Travel: 8 to 2000mm
- Linearity (Independent): Linear $\pm 1\%$ or $\pm 3\%$ Rotary $\pm 3\%$ or $\pm 5\%$
- Repeatability: No hysteresis, but with any wiper looseness some hysteresis will occur
- Power Rating (depending on size, varies with length and temperature): 1 Watt max. @ 25°C, ≤ 0.5 Watt recommended
- Resolution: Analog output theoretically infinite; affected by variation of contact wiper surface area.
- Dielectric Value: No affect @ 500VAC for 1 minute

Dimensional Diagram - Stock Linear ThinPot

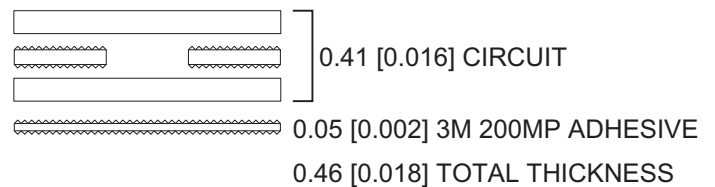


A	12.50mm 0.492"	25.00mm 0.984"	50.00mm 1.969"	100.00mm 3.937"	150.00mm 5.906"	170.00mm 6.693"	200.00mm 7.874"	300.00mm 11.811"	400.00mm 15.748"	500.00mm 19.685"	750.00mm 29.528"	1000.00mm 39.370"
P	18.85mm 0.742"	31.35mm 1.234"	56.35mm 2.219"	106.35mm 4.187"	156.35mm 6.156"	176.35mm 6.943"	206.35mm 8.124"	306.35mm 12.061"	406.35mm 15.998"	506.35mm 19.935"	756.35mm 29.778"	1006.35mm 39.620"
T	12.70mm 0.500"		25.00mm 0.984"									

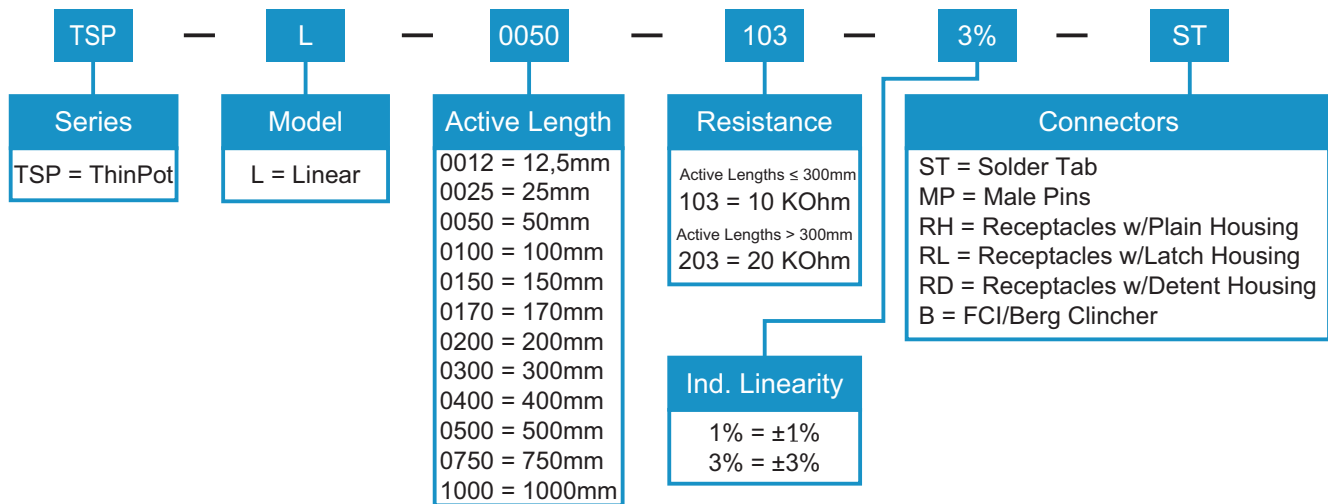
Electrical Schematic



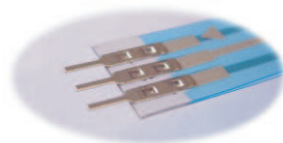
Material Cross-Section



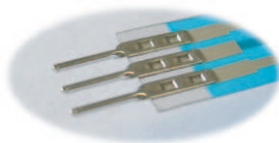
How to Order - Linear ThinPots



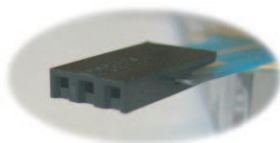
Standard Connector Options



Crimpflex Solder Tab (ST)



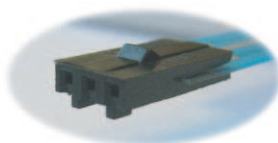
Crimpflex Short Male Pins (MP)



Crimpflex Female Receptacles with a Plain Housing (RH)



Crimpflex Female Receptacles with a Latch Housing (RL)



Crimpflex Female Receptacles with a Detent Housing (RD)



FCI/Berg Clincher (B)

Customization

Customize the size, shape, and even the number of tracks. Such custom requests, for example, can be: multiple ganged sensors (up to 40 tracks); serpentine active area track; custom lengths 10mm-2000mm; custom rotary diameters, etc. Feel free to contact Spectra Symbol with your custom request at sales@spectrasymbol.com or (888)795-2283.

How It Works

In simple terms, the ThinPot membrane potentiometer is a resistive element, which comprises a conductive resistor, a sealed encasement and a simple wiper assembly. A membrane potentiometer can also function as a voltage divider.

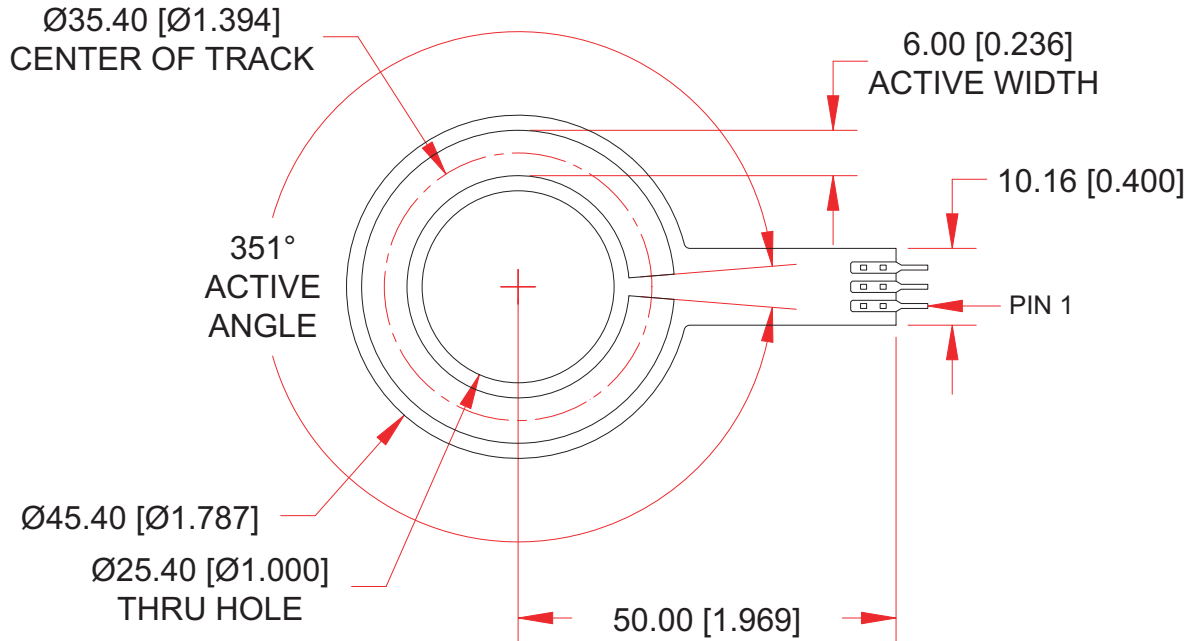
The ThinPot is a three-wire system with two resistive output channels and an electrical collector channel.



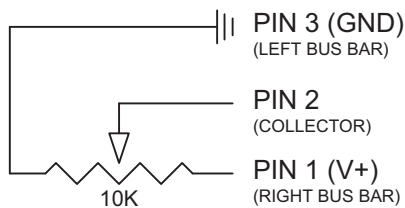
By pressing a wiper down onto the top circuit the SoftPot produces the desired electrical output. The "wiper" is a non-conductive mechanism that depresses the top circuit actuating the potentiometer from the outside of the element. The top and bottom circuits are separated by 0.15mm (0.006") of spacer adhesive build-up and contact between the circuit occurs by pressure (usually 0.7-1.8 Newtons) from the wiper on the top circuit, pushing down until the top circuit connects with the bottom circuit to create a potentiometric output.



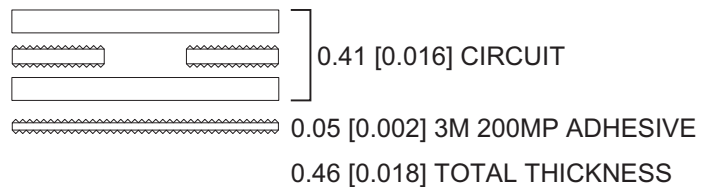
The construction of the wiper design can adapt to any application because most materials can serve as the wiper: plastics, metals, sliders, rollers, wheels, etc. Also, the ThinPot can also be manually (hand) actuated.



Electrical Schematic



Material Cross-Section



How to Order - Rotary ThinPot

TSP	—	R	—	0036	/	0351	—	103	—	5%	—	ST
Series		Model		Center of Active Track		Active Angle		Resistance		Connectors		
TSP = ThinPot		R = Rotary		0036 = 35.40mm		0351 = 351°		103 = 10 KOhm		ST = Solder tab MP = Male Pins RH = Receptacles w/Plain Housing RL = Receptacles w/Latch Housing RD = Receptacles w/Detent Housing B = FCI/Berg Clincher		
								Ind. Linearity				
								3% = ±3%				
								5% = ±5%				

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Spectra Symbol:

[TSP-L-0012-103-3%-ST](#) [TSP-L-0025-103-3%-ST](#) [TSP-L-0050-103-3%-ST](#) [TSP-L-0100-103-3%-ST](#) [TSP-L-0150-103-3%-ST](#) [TSP-L-0170-103-3%-ST](#) [TSP-L-0200-103-3%-ST](#) [TSP-L-0300-103-3%-ST](#) [TSP-L-0400-203-3%-ST](#) [TSP-L-0500-203-3%-ST](#) [TSP-L-0750-203-3%-ST](#) [TSP-L-1000-203-3%-ST](#) [TSP-L-0050-103-1%-ST](#) [TSP-L-0170-103-1%-ST](#) [TSP-L-0200-103-1%-ST](#) [TSP-L-0300-103-1%-ST](#) [TSP-L-0400-203-1%-ST](#) [TSP-L-0500-203-1%-ST](#) [TSP-L-0750-203-1%-ST](#) [TSP-L-1000-203-1%-ST](#) [TSP-L-0012-103-1%-ST](#) [TSP-L-0025-103-1%-ST](#) [TSP-L-0100-103-1%-ST](#) [TSP-L-0150-103-1%-ST](#) [TSP-L-0012-103-1%-RH](#) [TSP-L-0025-103-1%-RH](#) [TSP-L-0050-103-1%-RH](#) [TSP-L-0100-103-3%-RH](#) [TSP-L-0200-103-1%-RH](#) [TSP-L-0300-103-1%-RH](#) [TSP-L-0750-203-3%-RH](#) [TSP-L-0012-103-3%-RH](#) [TSP-L-0025-103-3%-RH](#) [TSP-L-0050-103-3%-RH](#) [TSP-L-0150-103-3%-RH](#) [TSP-L-0170-103-3%-RH](#) [TSP-L-0200-103-3%-RH](#) [TSP-L-0300-103-3%-RH](#) [TSP-L-0400-203-3%-RH](#) [TSP-L-0500-203-3%-RH](#) [TSP-L-1000-203-3%-RH](#) [TSP-L-0500-203-3%-RLU](#) [TSP-L-0300-103-3%-RLD](#) [TSP-L-0170-103-1%-RLU](#) [TSP-L-0012-103-3%-MP](#) [TSP-L-0150-103-1%-RLD](#) [TSP-L-0100-103-3%-RLD](#) [TSP-L-0025-103-1%-RLU](#) [TSP-L-0750-203-1%-RLU](#) [TSP-L-0200-103-3%-RLU](#) [TSP-L-0150-103-3%-RLU](#) [TSP-L-0500-203-3%-MP](#) [TSP-L-1000-203-3%-MP](#) [TSP-L-0150-103-3%-RLD](#) [TSP-L-0400-203-3%-RLD](#) [TSP-L-0170-103-3%-MP](#) [TSP-L-0400-203-1%-RLD](#) [TSP-L-0050-103-1%-MP](#) [TSP-L-0200-103-3%-RLD](#) [TSP-L-0012-103-1%-RLU](#) [TSP-L-0012-103-3%-RLD](#) [TSP-L-0025-103-3%-RLU](#) [TSP-L-0400-203-1%-RLU](#) [TSP-L-0500-203-3%-RLD](#) [TSP-L-0400-203-1%-MP](#) [TSP-L-0025-103-3%-MP](#) [TSP-L-0100-103-3%-RLU](#) [TSP-L-0025-103-1%-MP](#) [TSP-L-0200-103-1%-RLU](#) [TSP-L-0300-103-3%-MP](#) [TSP-L-0750-203-3%-RLD](#) [TSP-L-0170-103-3%-RLU](#) [TSP-L-0750-203-1%-RLD](#) [TSP-L-1000-203-3%-RLD](#) [TSP-L-0500-203-1%-MP](#) [TSP-L-0300-103-1%-RLD](#) [TSP-L-0100-103-3%-MP](#) [TSP-L-1000-203-3%-RLU](#) [TSP-L-1000-203-1%-RLD](#) [TSP-L-1000-203-1%-RLU](#) [TSP-L-0050-103-1%-RLU](#) [TSP-L-0500-203-1%-RLD](#) [TSP-L-0050-103-3%-RLU](#) [TSP-L-0150-103-1%-MP](#) [TSP-L-0100-103-1%-RLD](#) [TSP-L-0400-203-3%-RLU](#) [TSP-L-0012-103-1%-MP](#) [TSP-L-0150-103-3%-MP](#) [TSP-L-0170-103-3%-RLD](#) [TSP-L-0200-103-3%-MP](#) [TSP-L-0012-103-1%-RLD](#) [TSP-L-0200-103-1%-RLD](#) [TSP-L-0170-103-1%-RLD](#) [TSP-L-0050-103-3%-RLD](#) [TSP-L-0025-103-3%-RLD](#) [TSP-L-0300-103-3%-RLU](#) [TSP-L-0750-203-1%-MP](#) [TSP-L-0750-203-3%-RLU](#) [TSP-L-0750-203-3%-MP](#) [TSP-L-0150-103-1%-RLU](#)